

Amendments to the Claims:

This listing of Claims will replace all prior versions, and listings, of claims in the application:

1-55. (Canceled)

56. (New) A method of managing a state memory adapted for storing state information applicable in a message communication between hardware-containing communications units in a communications system, the method implemented by one of the hardware-containing communications units comprising the steps of:

obtaining a plurality of messages to be transmitted over a radio link;

generating state information based on a first message of the plurality of messages;

if the first message comprises information relating to session setup, storing the generated state information in a first portion of the state memory;

if the first message comprises presence information, storing the generated state information in a second portion of the state memory different from the first portion, such that state information generated based on messages comprising presence information is prevented from overwriting state information generated based on messages comprising information relating to session setup;

compressing a second message of the plurality of messages based on state information stored in the state memory and associated with the second message; and

transmitting the compressed second message over the radio link.

57. (New) The method of Claim 56, wherein compressing the second message comprises:

determining a portion of the second message to remove based on the associated state information; and

removing the determined portion from the second message.

58. (New) The method of Claim 56, wherein storing the generated state information in the second portion of the state memory if the first message comprises presence information comprises:

determining that the first message does not comprise information relating to session setup; and

in response to determining that the first message does not comprise information relating to session setup, storing the generated state information in the second portion of the state memory.

59. (New) The method of Claim 56, wherein storing the generated state information in the second portion of the state memory if the first message comprises presence information comprises:

determining that the first message comprises presence information; and

in response to determining that the first message comprise presence information, storing the generated state information in the second portion of the state memory.

60. (New) The method of Claim 56, wherein generating state information based on a first message of the plurality of messages comprises:

deciding, for each of the plurality of messages, whether to generate state information; and

in response to deciding to generate state information for the first message, generating state information based on the first message.

61. (New) The method of Claim 60, wherein deciding whether to generate state information for the first message comprises deciding whether to generate state information for the first message based on a time threshold value associated with previously-generated state information stored in the state memory.

62. (New) The method of Claim 61, wherein deciding whether to generate state information for the first message comprises deciding whether to generate state information

for the first message based on a time threshold value associated with previously-generated state information that is of a same class as the first message.

63. (New) The method of Claim 60, wherein deciding whether to generate state information for the first message comprises deciding whether to generate state information for the first message based on a compression factor associated with the first message, wherein the compression factor indicates a measure of how much a size of the first message would be reduced if the first message were compressed based on state information currently stored in the state memory.

64. (New) The method of Claim 60, wherein deciding whether to generate state information for the first message comprises deciding whether to generate state information for the first message based on a similarity between the first message and previously-generated state information stored in the state memory.

65. (New) The method of Claim 56, wherein storing the generated state information in the first portion of the state memory comprises:

investigating whether similar state information is already stored in the first portion of the state memory; and

storing the state information if no similar state information is already stored in the first portion of the state memory.

66. (New) A hardware-containing apparatus for communicating messages over a radio link, comprising:

a state memory operable to store state information, the state memory comprising:

a first portion associate with a first class of messages; and

a second portion associated with a second class of messages;

a state handler operable to:

generate state information based on a first message of a plurality of messages to be transmitted over a wireless link;

if the first message comprises information relating to session setup, store the generated state information in a first portion of the state memory;

if the first message comprises presence information, store the generated state information in a second portion of the state memory different from the first portion, such that state information generated based on messages comprising presence information is prevented from overwriting state information generated based on messages comprising information relating to session setup;

a processor operable to compress a second message of the plurality of messages based on state information stored in the state memory and associated with the second message; and

an input/output (I/O) unit operable to transmit the compressed second message over the radio link.

67. (New) The hardware-containing apparatus of Claim 66, wherein the processor is operable to compress the second message by:

determining a portion of the second message to remove based on the associated state information; and

removing the determined portion from the second message.

68. (New) The hardware-containing apparatus of Claim 66, wherein the state handler is operable to store the generated state information in the second portion of the state memory if the first message comprises presence information by:

determining that the first message does not comprise information relating to session setup; and

in response to determining that the first message does not comprise information relating to session setup, storing the generated state information in the second portion of the state memory.

69. (New) The hardware-containing apparatus of Claim 66, wherein the state handler is operable to store the generated state information in the second portion of the state memory if the first message comprises presence information by:

determining that the first message comprises presence information; and in response to determining that the first message comprise presence information, storing the generated state information in the second portion of the state memory.

70. (New) The hardware-containing apparatus of Claim 66, wherein the state handler is operable to generate state information based on a first message of the plurality of messages by:

deciding, for each of the plurality of messages, whether to generate state information; and

in response to deciding to generate state information for the first message, generating state information based on the first message.

71. (New) The hardware-containing apparatus of Claim 70, wherein the state handler is operable to decide whether to generate state information for the first message by deciding whether to generate state information for the first message based on a time threshold value associated with previously-generated state information stored in the state memory.

72. (New) The apparatus of Claim 70, wherein the state handler is operable to decide whether to generate state information for the first message by deciding whether to generate state information for the first message based on a time threshold value associated with previously-generated state information that is of a same class as the first message.

73. (New) The apparatus of Claim 70, wherein the state handler is operable to decide whether to generate state information for the first message by deciding whether to generate state information for the first message based on a compression factor associated with the first message, wherein the compression factor indicates a measure of how much a size of the first message would be reduced if the first message were compressed based on state information currently stored in the state memory.

74. (New) The apparatus of Claim 70, wherein the state handler is operable to decide whether to generate state information for the first message by deciding whether to generate state information for the first message based on a similarity between the first message and previously-generated state information stored in the state memory.

75. (New) The apparatus of Claim 66, wherein the state handler is operable to store the generated state information in the first portion of the state memory by investigating whether similar state information is already stored in the first portion of the state memory, and storing the state information if no similar state information is already stored in the first portion of the state memory.

76. (New) A method of managing a state memory adapted for storing state information applicable in a message communication between hardware-containing communications units in a communications system, the method implemented by one of the hardware-containing communications units comprising the steps of:

- obtaining a plurality of messages to be transmitted over a radio link;
- generating state information based on a first message of the plurality of messages;
- if the first message comprises information relating to session setup, storing the generated state information in a first portion of the state memory; and
- if the first message comprises presence information, storing the generated state information in a second portion of the state memory different from the first portion, such that state information generated based on messages comprising presence information is prevented from overwriting state information generated based on messages comprising information relating to session setup.